



NOAA

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE



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Immediate Release
June 15, 2015

NOAA Fisheries mobilizes to gauge unprecedented West Coast toxic algal bloom

Offshore survey will measure extent and severity of largest harmful algal bloom in more than a decade

NOAA Fisheries' Northwest Fisheries Science Center in Seattle has mobilized extra scientists to join a fisheries survey along the West Coast to chart an extensive harmful algal bloom that spans much of the West Coast and has triggered numerous closures of important shellfish fisheries in Washington, Oregon and California.

The bloom stretches from the Central California Coast north to Washington and possibly Alaska, and involves some of the highest concentrations of the natural toxin domoic acid ever observed in [Monterey Bay](#) and off the Central Oregon Coast. In early June elevated toxin levels led shellfish managers to [close the southern Washington Coast](#) to Dungeness crab fishing, the largest-ever closure of Washington's multi-million-dollar crab fishery.

"We're taking advantage of our active surveys to focus research on a serious concern for coastal communities and the seafood industry," said Eileen Sobeck, assistant administrator for NOAA fisheries. "The better we understand what's happening out on the water, the better we can address the impacts."

While localized blooms of marine algae that naturally produce domoic acid are common in spring, the bloom that began earlier this year has grown into the largest and most severe in more than a decade. Sardines, anchovy and other fish that feed on the algae and other microorganisms known as plankton can accumulate the toxin, in turn poisoning birds and sea lions that feed on them.

"This is unprecedented in terms of the extent and magnitude of this harmful algal bloom and the warm water conditions we're seeing offshore," said Vera Trainer, a team lead for [Marine Biotoxins](#) at the Northwest Fisheries Science Center (NWFSC) in Seattle. "Whether they're related we can't really say yet, but this survey gives us the opportunity to put these pieces together."

State agencies monitor toxin levels closely and impose harvest closures where necessary to ensure that all commercial seafood remains safe to eat. NOAA Fisheries and others are also developing [advanced robotic systems](#) and [models](#) to better detect and forecast harmful algal blooms. See state agency websites linked below for the latest details on closures in [California](#), [Oregon](#) and [Washington](#).

The NWFSC is working closely with the University of California Santa Cruz, University of Washington, Quileute Nation and Makah Tribe to add scientists to an already scheduled fisheries survey leaving today (June 15) from Newport, Ore., aboard the [NOAA research ship](#)

[Bell M. Shimada](#). The survey is a partnership between the NWFSC in Seattle and the Southwest Fisheries Science Center in La Jolla, Calif., to assess sardine and hake populations on the West Coast. The additional scientists will examine levels of marine toxins and the organisms that produce them.

The researchers will collect samples of water, the microscopic diatoms that produce domoic acid and another form of marine microorganism called dinoflagellates that produce another type of toxin called paralytic shellfish toxins (PSTs) that have also been detected in some shellfish. Domoic acid and PSTs are rarely found in shellfish at the same time, but they have been this year.

The scientists will also sample plankton-feeding fish such as anchovies and sardines that concentrate the toxins and transfer them to other marine animals.

Research during previous harmful algal blooms found “hot spots” of toxin-producing organisms along the West Coast, Trainer said, and the survey will search for similar concentrations this year.

The [Ecology and Oceanography of Harmful Algal Blooms \(ECOHAB\) Research Program](#) is completing a study of one such [hot spot in California’s Monterey Bay](#) and provides funding for UC Santa Cruz to analyze samples that will be collected during the survey. The results will help investigate connections between the current bloom and unusually warm ocean temperatures that have dominated the West Coast since last year, which may offer a preview of ocean conditions likely to become more common with climate change.

California officials have warned against consuming recreationally harvested mussels and clams, commercially or recreationally caught anchovy and sardines, or the internal organs of commercially or recreationally caught crab taken from Monterey and Santa Cruz counties.

Officials in Oregon have halted all shellfish harvesting from the Columbia River south to Tillamook Head and closed the entire state coastline to razor clamming because of elevated levels of domoic acid. High levels of PSTs have led to the closure of mussel harvesting along the Oregon Coast north of Gold Beach.

All coastal Washington beaches have also been closed to razor clamming, at an estimated loss of more than \$9 million in revenue for coastal communities in the last month alone.

Background: Harmful Algal Bloom and Hypoxia Research and Control Act
<http://coastalscience.noaa.gov/research/habs/habhrca/>

Current closures in California
<http://www.dfg.ca.gov/marine/healthadvisory.asp>

Current closures in Oregon
<http://www.oregon.gov/oda/programs/foodsafety/shellfish/pages/shellfishclosures.aspx>

Current closures in Washington
<https://fortress.wa.gov/doh/eh/maps/biotoxin/biotoxin.html>

Washington coastal domoic acid levels

http://wdfw.wa.gov/fishing/shellfish/razorclams/domoic_levels.html